ZWO ASI 深空相机
快速指南

V2.0



非常感谢购买ZWO ASI系列相机。该快速指南是一个简短的操作指导，可以让您快速运行起相机。

如果想了解更多关于相机使用的知识，请访问ZWO官网。

如何在电脑上连接相机（以Windows为例）

1. 打开官方网站 https://www.zwoastro.cn/，
选择【软件下载】。



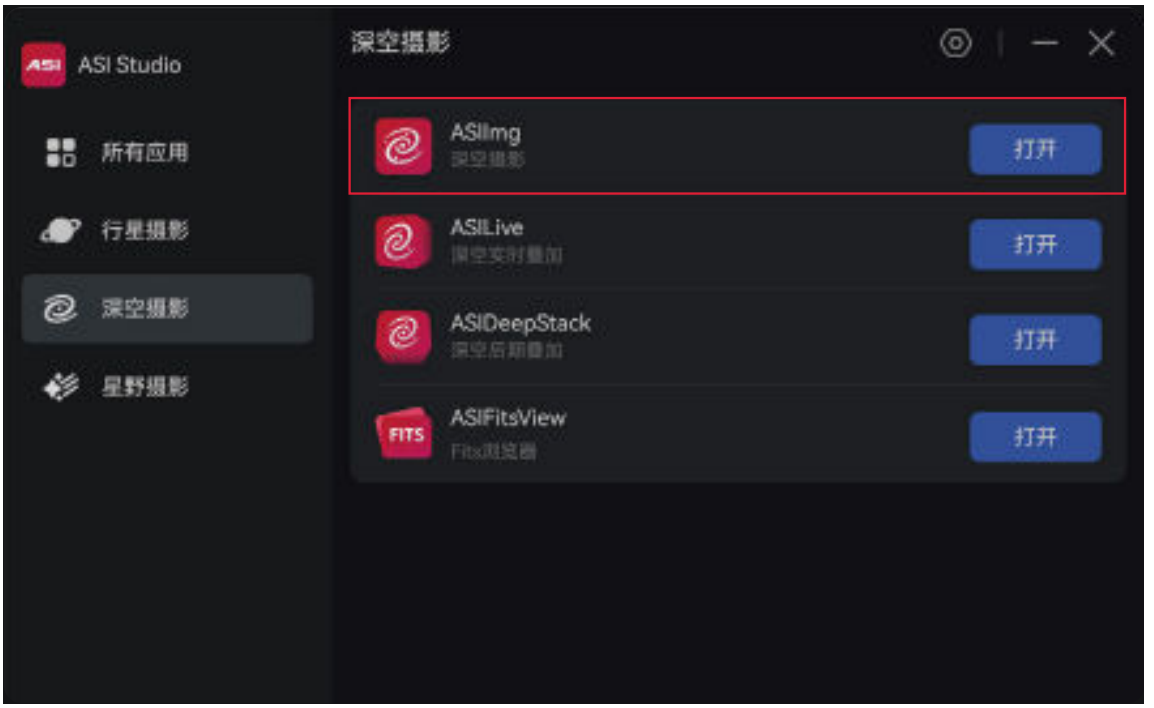
2. 点击下载【ASIStudio】和【ASI 相机驱动】。

*根据电脑的系统，如果是64位系统请直接点击下载按钮，如果是32位系统请选择：其他版本X86



3.下载完成后，双击文件，安装ASI相机驱动和ASIStudio软件，根据提示操作完成即可。

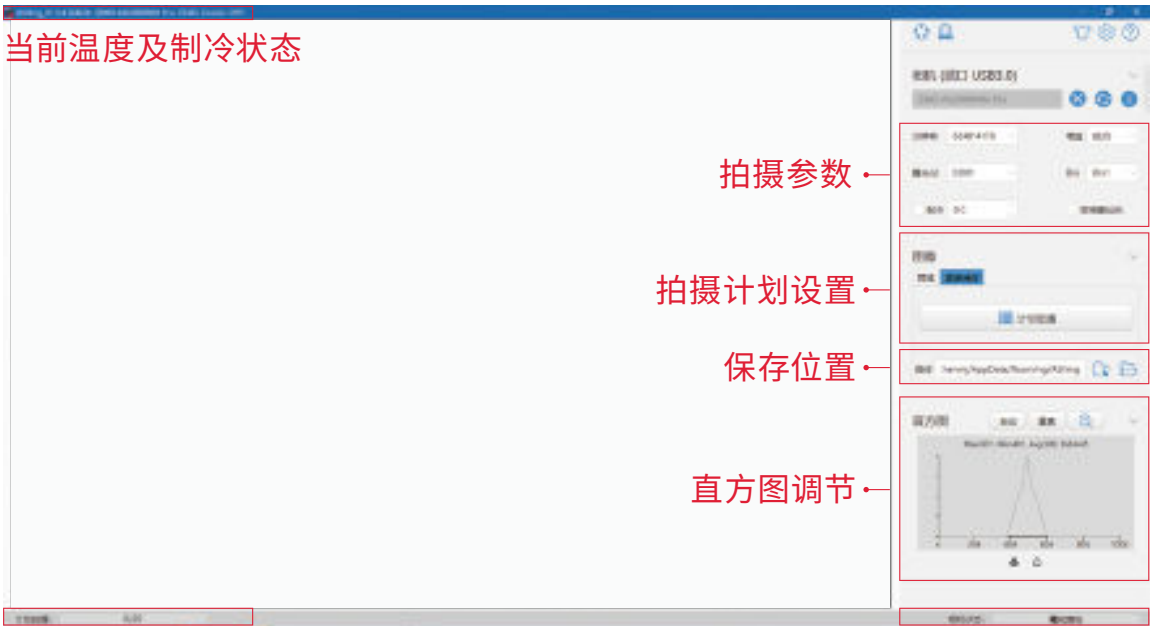
4.打开ASIStudio，选择深空摄影软件【ASIImg】，点击打开。



5. 将12V电源连接到相机的DC 12V-3A接口上（接口标准为：5.5*2.1mm，内正外负），再用标配的USB 3.0数据线连接在相机和电脑的USB3.0接口上，软件里点击开始按钮 ，打开相机。**如果不接12V电源，仅用USB连接电脑会无法识别。**



6. 设置好相关参数，即可进行拍摄。



7. 软件右上角有个 【?】按钮，鼠标单击按钮，会弹出【帮助文档】，如果有疑问，可以查看文档了解软件使用。





7. 使用第三方拍摄软件，须安装【ASCOM驱动】

7.1进入ZWO官网，选择【软件下载】安装ASCOM Platform ①，

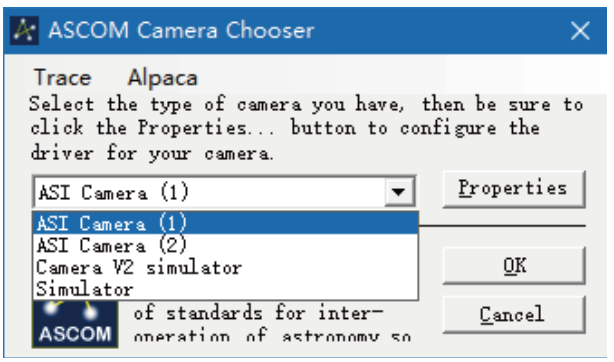
7.2然后再安装ASCOM驱动 ② 。

7.3安装完成后就可以打开第三方软件使用ASI相机了，比如MaximDL、NINA PHD2等软件。



8.3关于ASCOM设置

在ASCOM设置窗口里有两个相机选项，如果需要同时控制2个相机同时进行拍摄和导星，请选择“ASI Camera (1)”为主相机和“ASI Camera (2)”为导星相机。



如果只用1个相机拍摄，可以使用“ASI Camera (1)”来设置ASI相机。

点击【Properties】设置相机属性，我们为深空摄影提供3种常用设置：

【低增益】：适合高动态目标，例如M42等，此时动态范围最大。

【中增益】：大部分情况下都可以使用的增益，当不知道如何使用的时候就推荐使用这个。

【高增益】：适合曝光时间特别短，需要幸运成像这样的拍摄场景，此时读出噪声最低，但动态范围也很小。

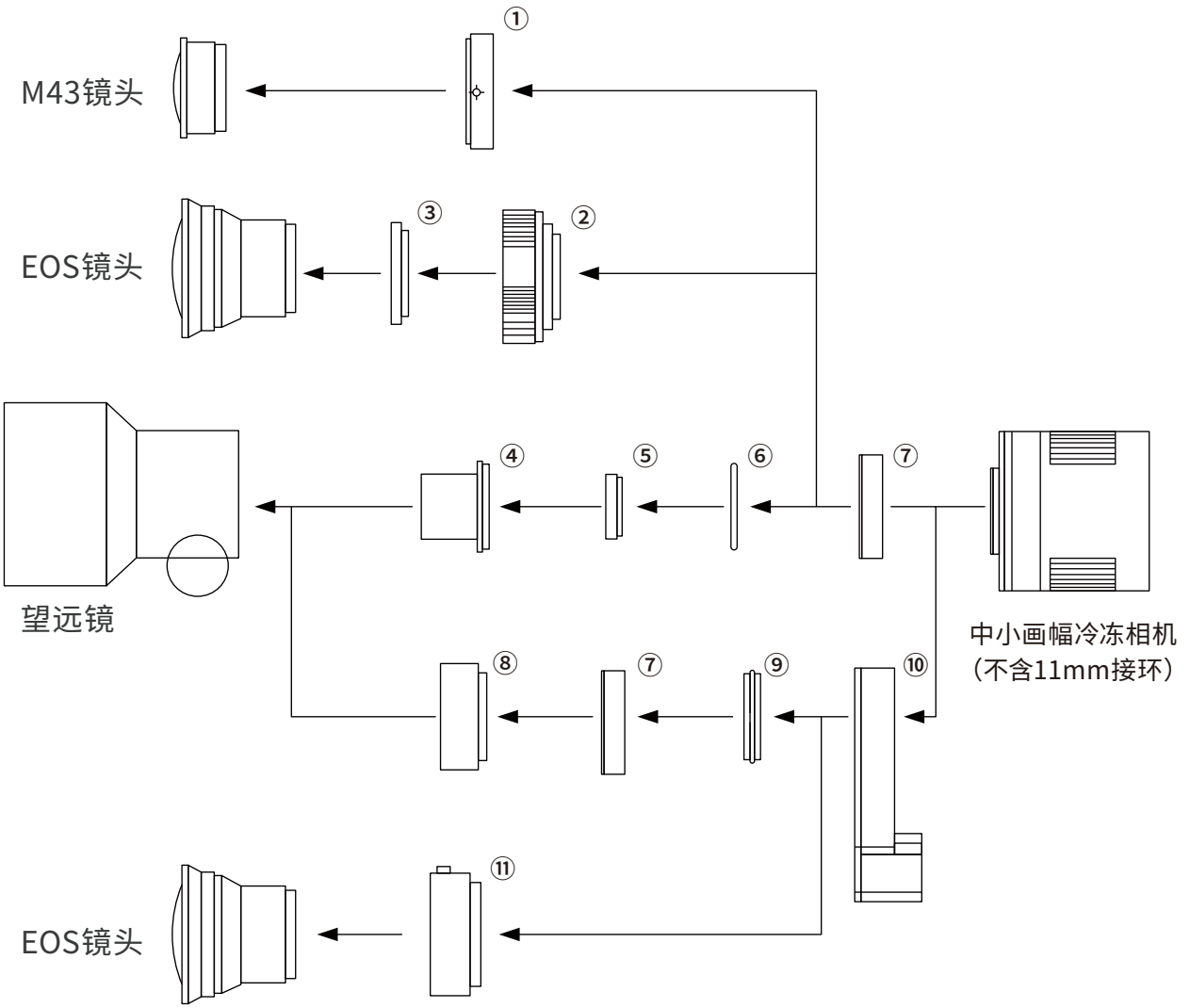
当然，也可以选择【手动】模式，自己设置【预定义设置】。



根据您的需要来选择设置，点击【确定】按钮。最后点击【OK】完成ASCOM的相机设置。

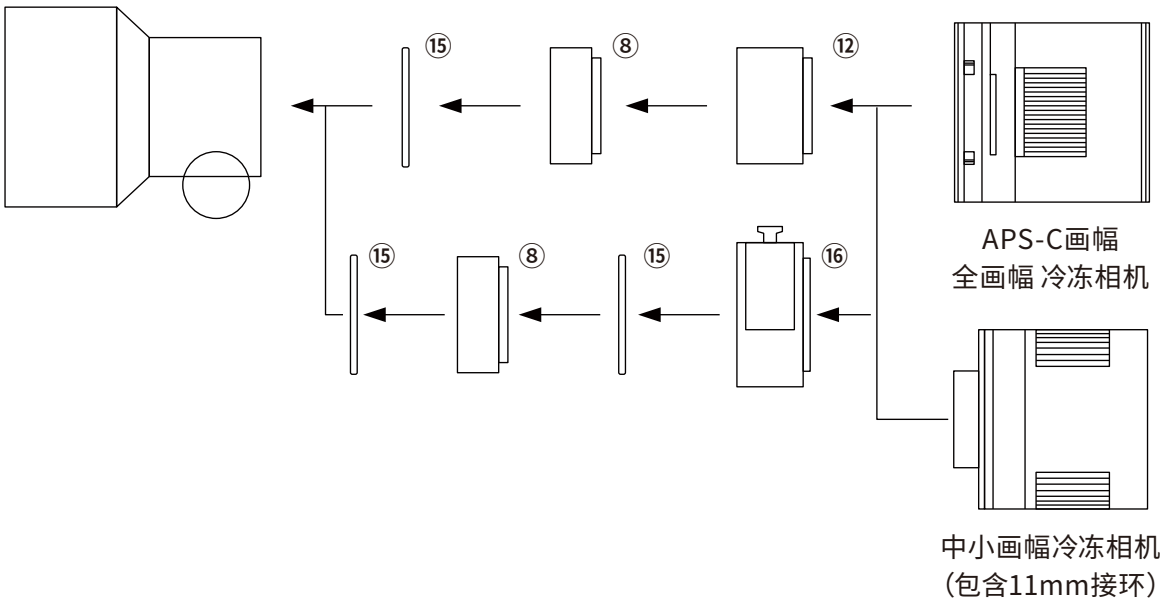
深空相机如何连接望远镜?

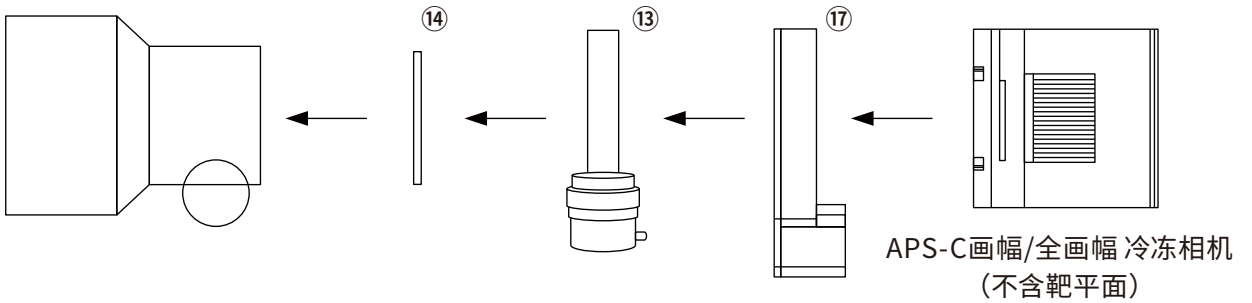
请先参考望远镜说明书确认望远镜的后截距数据，然后计算连接望远镜需要的转接环厚度。



如果您的望远镜后截距满足55mm，则可以参考我们的连接指示图进行安装。

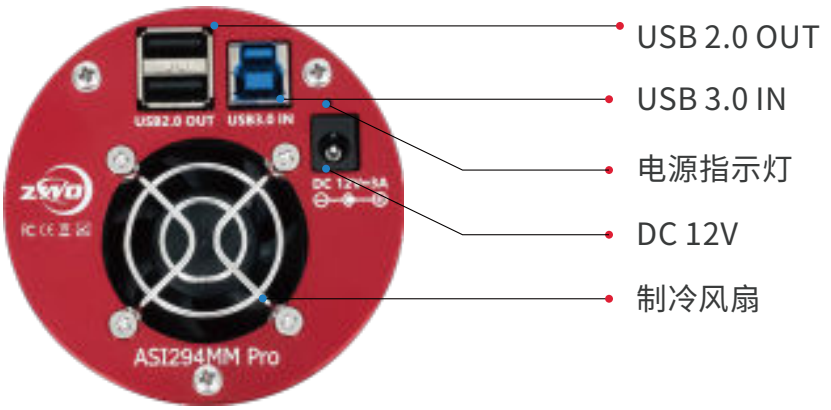
扫描右侧二维码，查看连接方式。





①. M43-T2 转接环(选配)
②. EOS-T2 转接环(选配)
③. 2"滤镜(选配)
④. 1.25"T桶
⑤. 1.25"滤镜(选配)
⑥. M42-1.25"转接环
⑦. T2 延长筒 11mm
⑧. 16.5mm 延长筒
⑨. T2-T2 转接环
⑩. 1.25"/36mm/31mm EFW
⑪.EOS-EFW 转接环
⑫.21mm转接环
⑬.OAG-L
⑭.靶平面调节环
⑮.M48-M42接环（选配）
⑯.M42滤镜抽屉
⑰.2" EFW

相机端口





接USB2.0 数据线



接USB 3.0/USB 2.0 数据线



接DC 12V电源线



可连接导星相机
滤镜轮等配件



电脑 USB 3.0 /USB 2.0 接口



12V 电源适配器（不含）

常见问题

1、拍摄的图像上有阴影正常么?

望远镜的周边减光、光学缺陷、滤镜安装不准确、焦平面不平整、CCD/CMOS上有灰尘等都会带来阴影，具体表现就是暗角、背景整体的渐变等。这些都可以通过后期处理中的平场校准加以扣除。

2、在没有外接电源情况下，相机不能正常运行是什么原因？

冷冻相机功耗大，USB无法满足其供电，相机无法正常运行，需要接通12V电源供电。

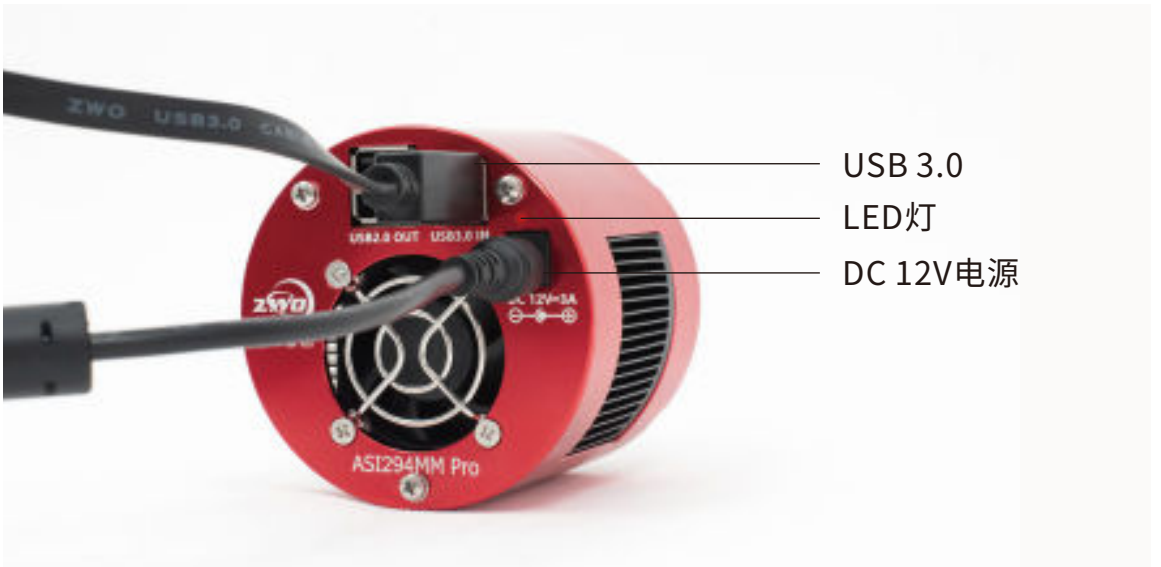
3、相机制冷功能不工作是什么原因？

3.1检查供电是否正常

检查并确认12V直流电源线是否连接，红色LED灯是否亮起。可以使用官方AC-DC 12V适配器，也可以用12V移动电源，电源接口标准为：5.5*2.1mm，内正外负。

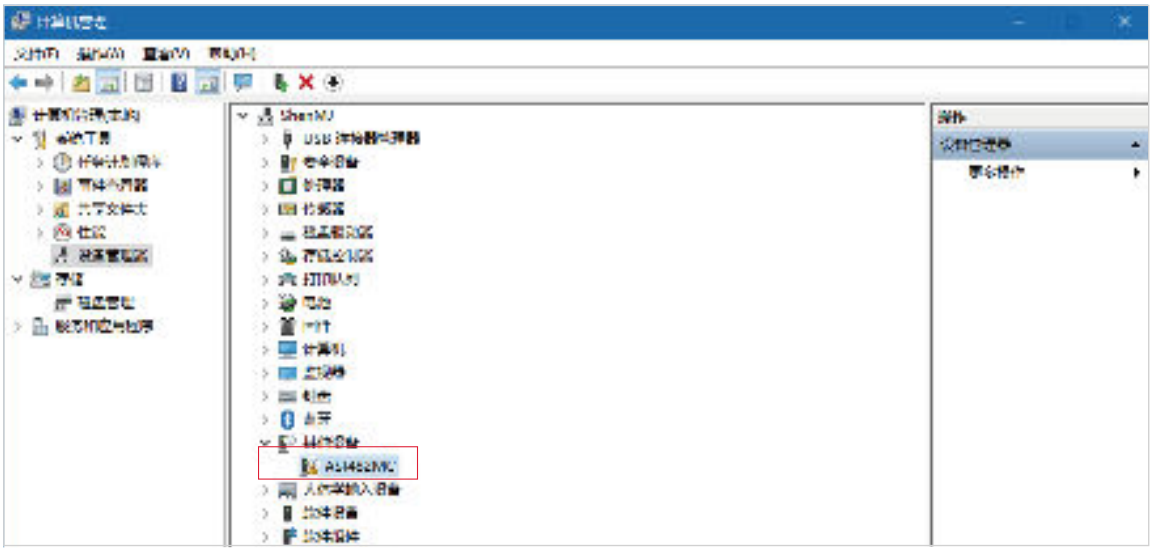
3.2 检查软件中是否开启了制冷功能

拍摄软件选择开启制冷功能，磁悬浮风扇才会转动，制冷系统才会工作。

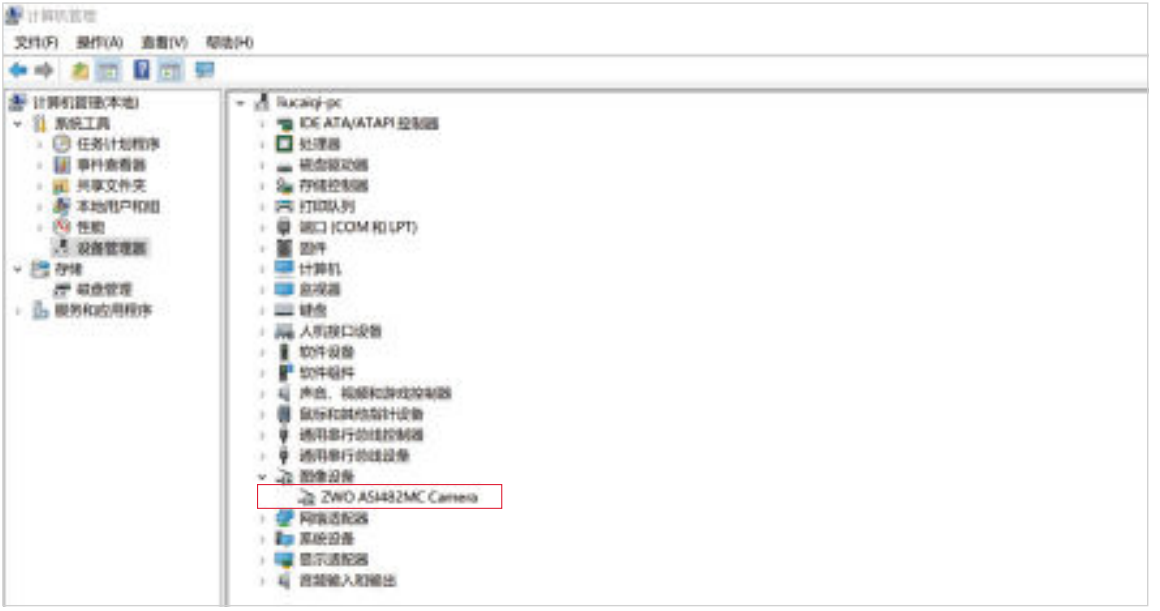


4、驱动安装后仍找不到相机?

查看设备管理器，如连接的相机设备旁边显示问号【?】和叹号【!】图标，可以尝试去电脑应用程序里卸载删除ZWO ASI Cameras driver驱动，并关闭杀毒软件（甚至删除杀毒软件）或者防火墙，重启电脑，重装驱动。



驱动安装成功示例：



扫码查看快速指南教程

扫码关注公众号

ZWO 官方网址

苏州振旺光电有限公司 Suzhou ZWO Co,. Ltd.
电 话: +86 0512 65923102
官 网: https://www.zwoastro.cn/
QQ群: 875338271
新浪微博: https://weibo.com/wenjha

Scan to watch
operating video

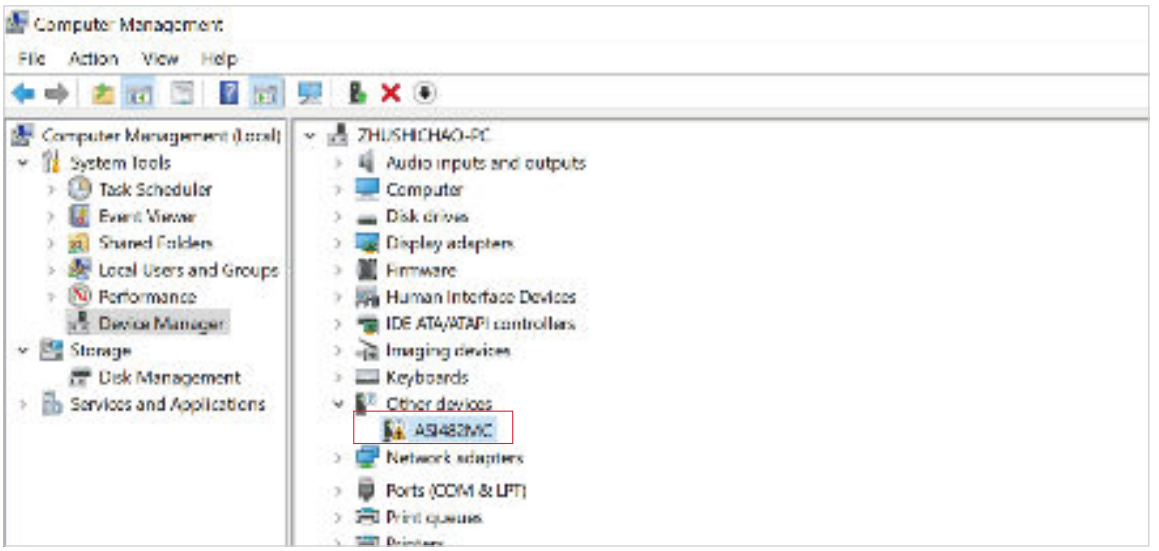
Facebook Page

ZWO WEB

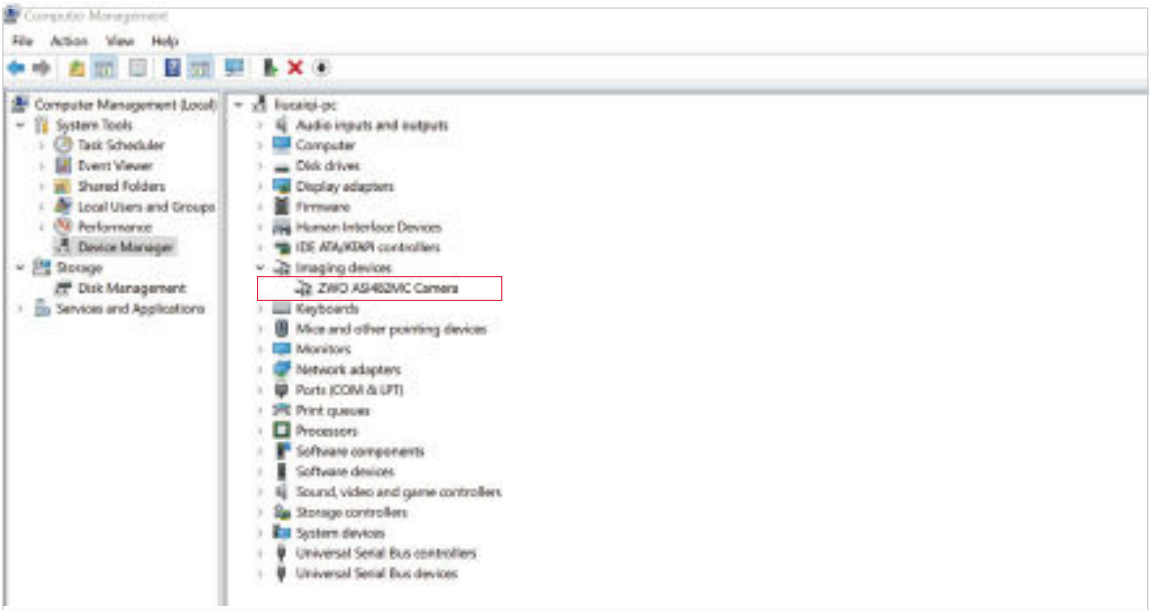
SuZhou ZWO Co,. Ltd.
Tel: +86 0512 65923102
Facebook: https://www.facebook.com/zwoastro/
Instagram: https://www.instagram.com/zwoastro/
Twitter: https://twitter.com/zwoastro
Web: https://www.zwoastro.com

4. Why can’ t I find the camera in PHD2 even drivers have already been installed?

Please check the Device Manager -> Image Device to see whether it has the ZWO camera in the list. A question mark or exclamation mark normally indicates the driver is not installed properly. Please uninstall it and close your antivirus software or firewall. Re-install the driver, then restart your computer.



Sample of the driver being installed properly :



2. Will the camera work without an external power supply?

The power consumption of cooled cameras is significant and cannot be met with USB power alone, so you will need to use a 12V power supply to power your cooled camera.

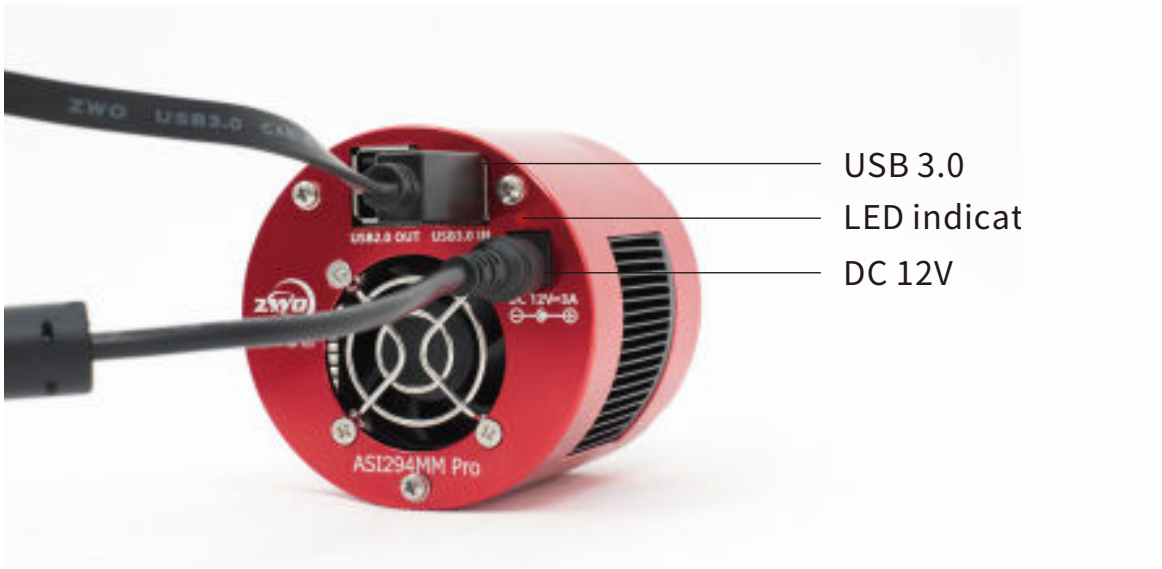
3. Why does the cooler not work?

3.1 Check if the power supply is working.

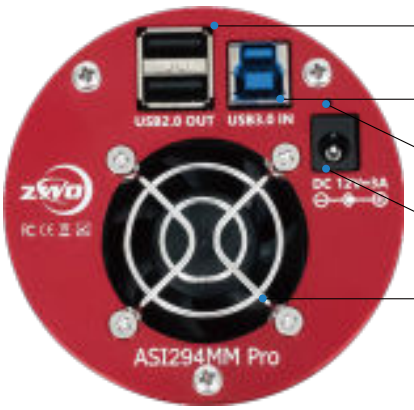
Make sure the camera is using DC 12V power, and the red LED power indicator is on. You can use the official ZWO AC-DC 12V power adapter, or 12V portable power supply. The interface standard: 5.5*2.1mm; center positive.

3.2 Check if the cooling function is turned on in your imaging software.

The cooling fan will only spin when the cooling function is turned on in the software.



Camera ports



USB 2.0 OUT

USB 3.0 IN

LED indicator

DC 12V

Cooling fan



USB2.0 cable



USB 3.0/USB 2.0 cable



DC 12V power supply cable



Connects to guide camera, EFW and other accessories



Connects to USB 3.0/USB 2.0 ports on computer

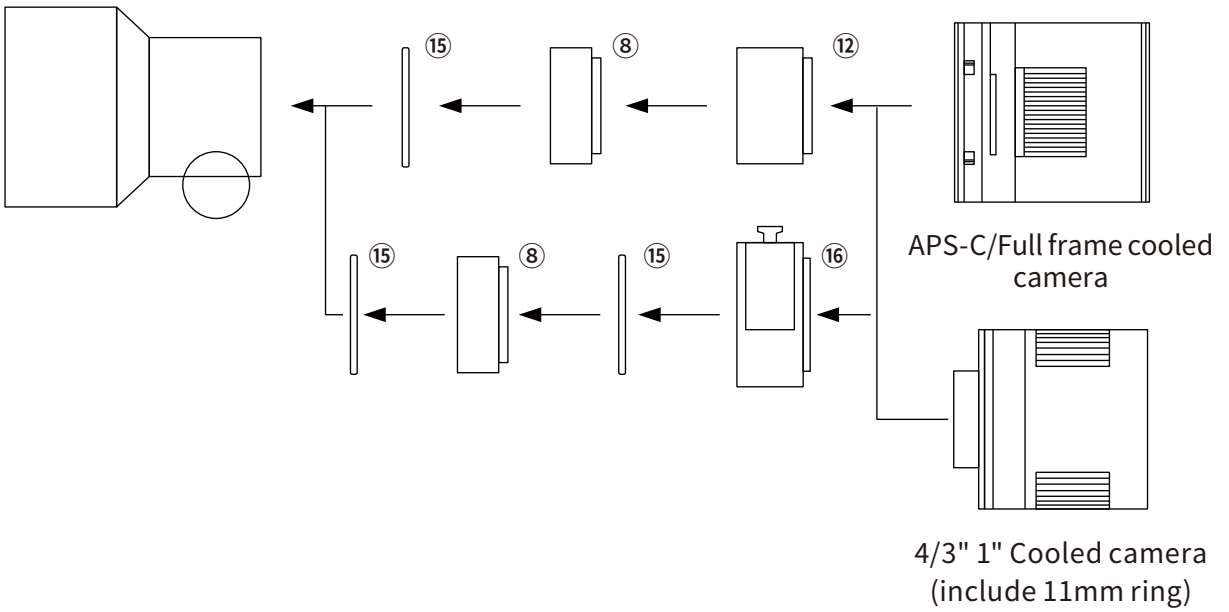


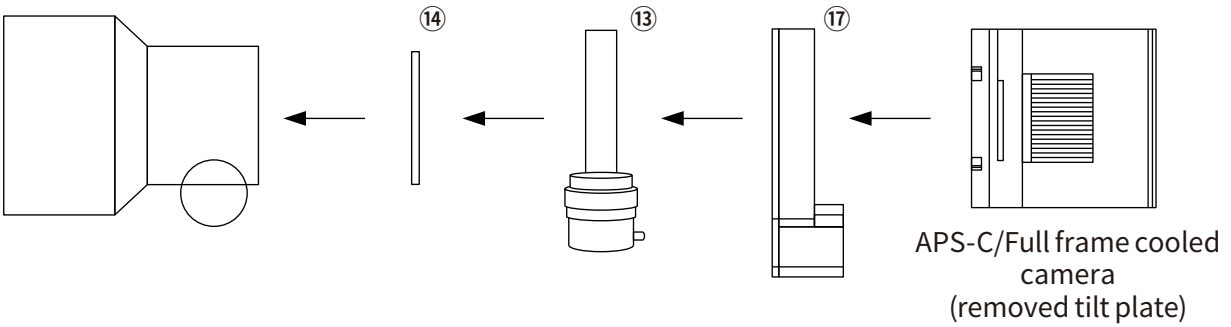
12v power adapter (Not included in the box)

FAQs

1. Is it normal to have uneven areas in my images?

Yes, there are many factors may lead to uneven images, such as poorly configured reducer/flatteners, incorrectly mounted filters, focuser tilt, dust on the sensor surface etc. Defects in the form of hot/cold pixels, vignetting or background gradient or other phenomenon, can be removed by the use of calibration frames in processing.

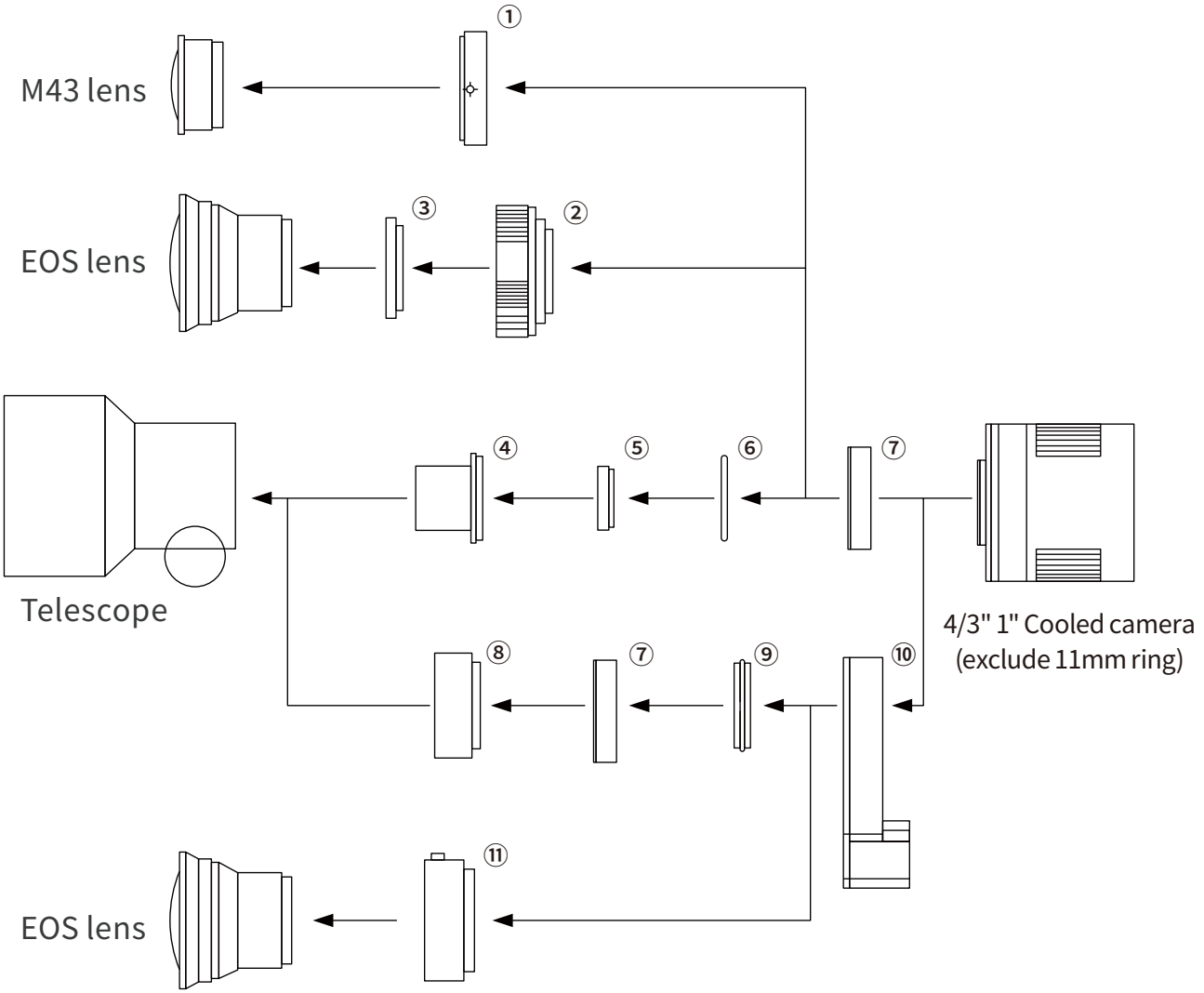




①. M43-T2 adapter (optional)
②. EOS-T2 adapter (optional)
③. 2" filter (optional)
④. 1.25" T-mount
⑤. 1.25" filter (optional)
⑥. M42-1.25" adapter
⑦. 11mm T2 extender
⑧. M42-M48 16.5mm extender
⑨. T2-T2 adapter
⑩. 1.25"/2"/36mm/31mm EFW
⑪. EOS-EFW adapter
⑫. 21mm T2 extender
⑬. OAG-L
⑭. Sensor tilt plate
⑮. M48-M42 adapter (optional)
⑯. M42 filter drawer
⑰. 2" EFW

How to connect your cooled camera to telescope?

Please refer to the telescope manual to understand what extension tubes or adapters maybe required to connect your ZWO camera. The use of an accessory such as a field flattener or reducer may require a specific back focus distance.



Many of these accessories use a common back focus distance of 55mm. You can visit the ZWO website and find instructions on how to configure your camera for this:

https://www.zwoastro.com/2018/06/14/best-back-focus-length-solutions-55mm/

(Scan the QR Code for the tutorial.)

If you only plan to use one camera, then just choose “ASI Camera (1)”.

Click [Properties] to configure the camera.

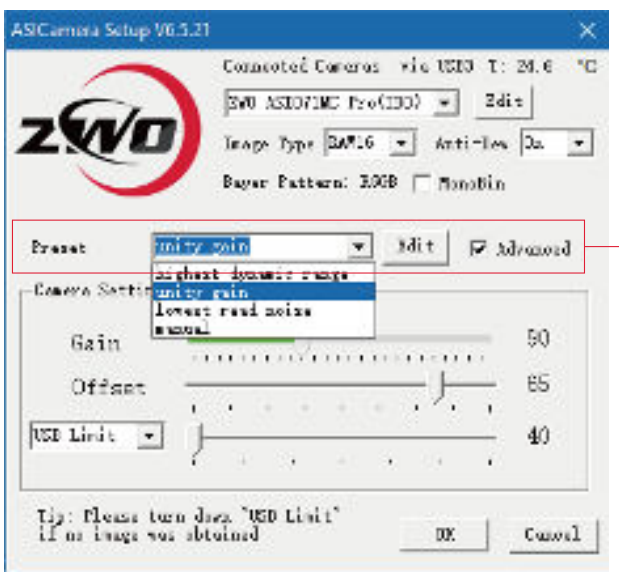
Three common settings for DSO imaging are available.

[Low Gain]: Suitable for targets with high dynamic range, such as M42. It provides maximum dynamic range.

[Mid Gain]: Can be used in most cases. If you are not sure which kind of gain to set, then it is recommended to choose this.

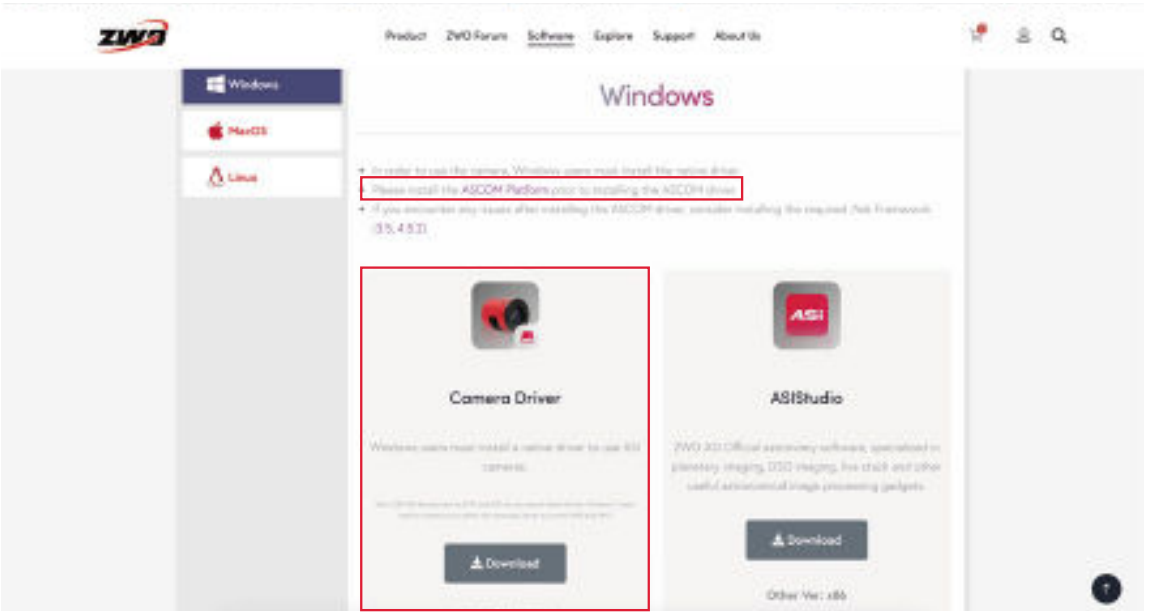
[High Gain]: Suitable for lucky imaging or other imaging methods with short exposure time. It provides lowest readout noise, also low dynamic range.

Or you can also choose [manual] mode to configure these settings to your own liking.



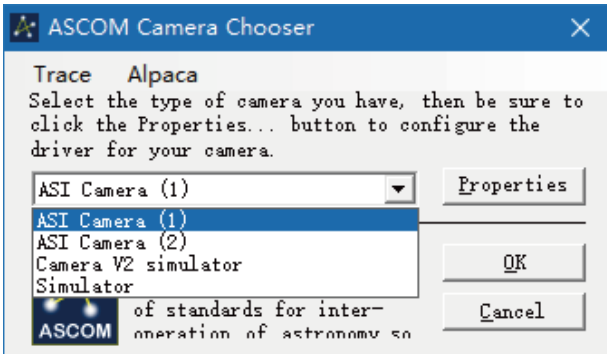
Choose the camera setup as you need, click [OK] to complete the configuration.

8. If you use the third-party software, the [ASCOM driver] is needed. You will need to download and install ASCOM Platform first and then ASICOM Driver. Then you may be able to use MaximDL, NINA and PHD2.

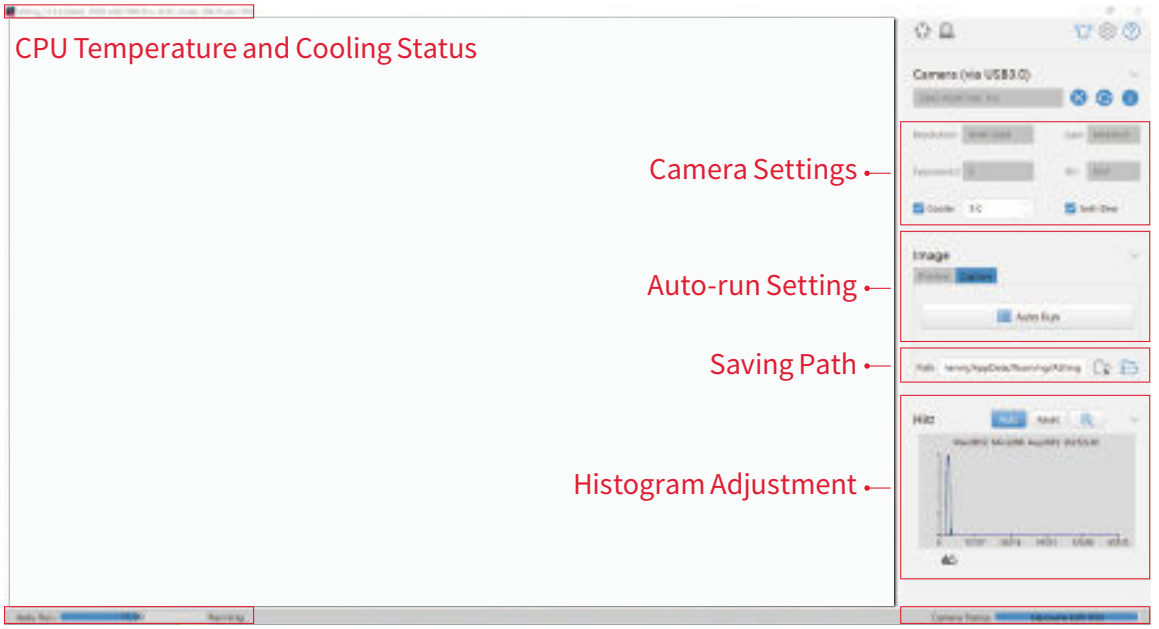


ASCOM configuration

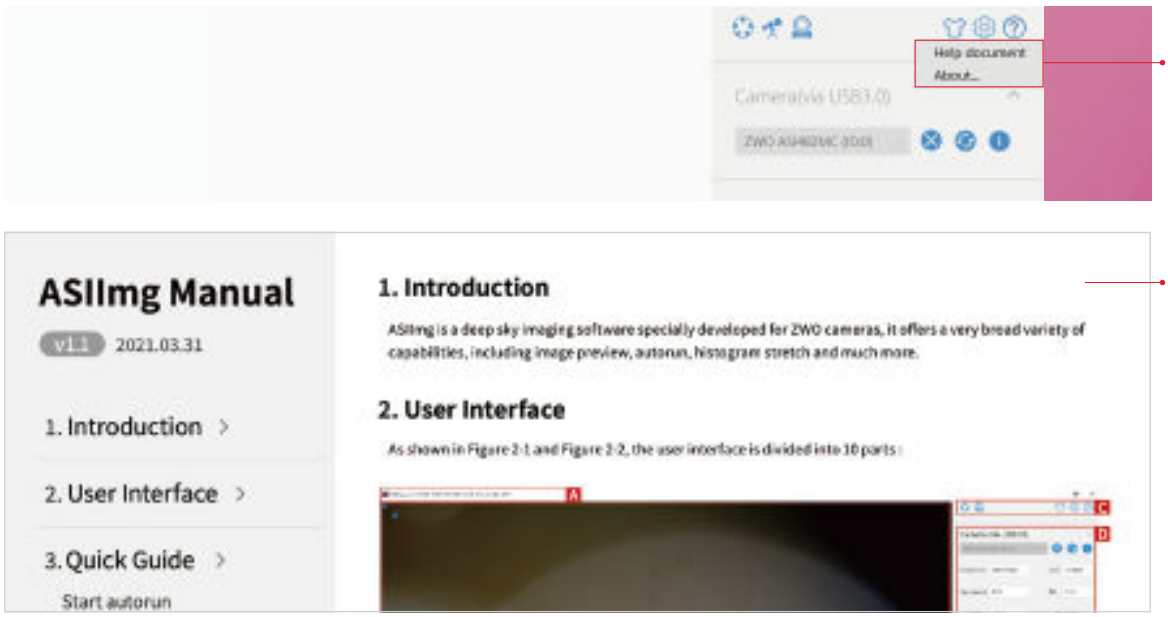
There are two camera options in the ASCOM configuration window “ASCOM Camera Chooser”, if you plan to use two cameras simultaneously for both imaging and guiding, then please choose “ASI Camera (1)” as the main camera and choose “ASI Camera (2)” as the guide camera.



6. Adjust the settings for the camera.



7. A Help function is available from within the application by clicking the help button, This document will provide a more detailed guide should you require it.

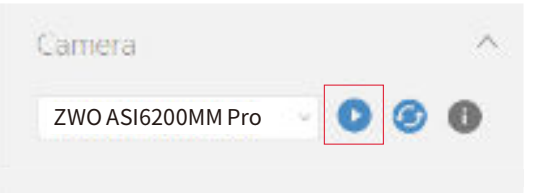


3. Double click the files to install ASI Camera driver and ASIStudio. Follow the prompts to complete the installation process.

4. Open ASIStudio, and then choose the deep-space objects imaging software [ASIImg].

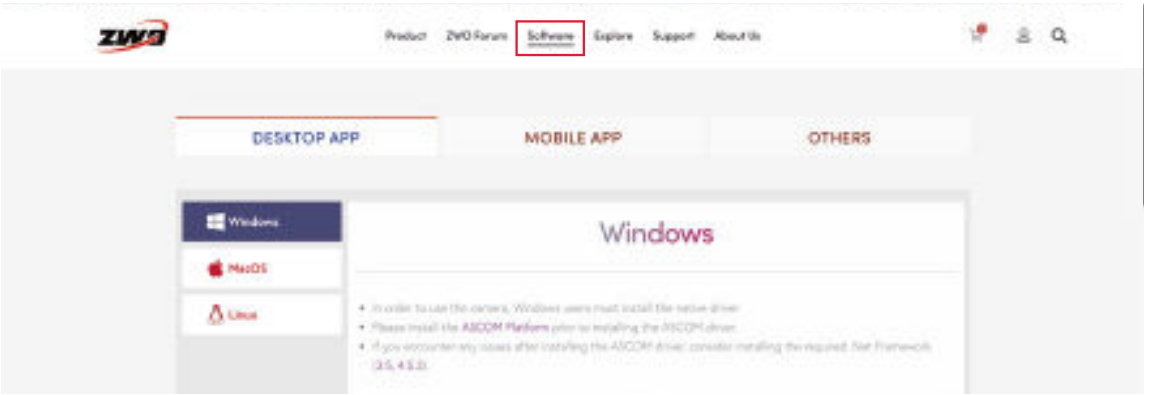


5. Plug the 12V power supply cable into the DC connector on the camera (Connector type 5.5*2.1mm, center positive, 12V 3A required), then connect the camera to computer via the USB 3.0 cable that is included in the box. Click Play icon to start imaging. Please notice that the camera needs to be powered by 12V power supply, just connecting it to computer with a USB cable will lead to recognition failure issue.

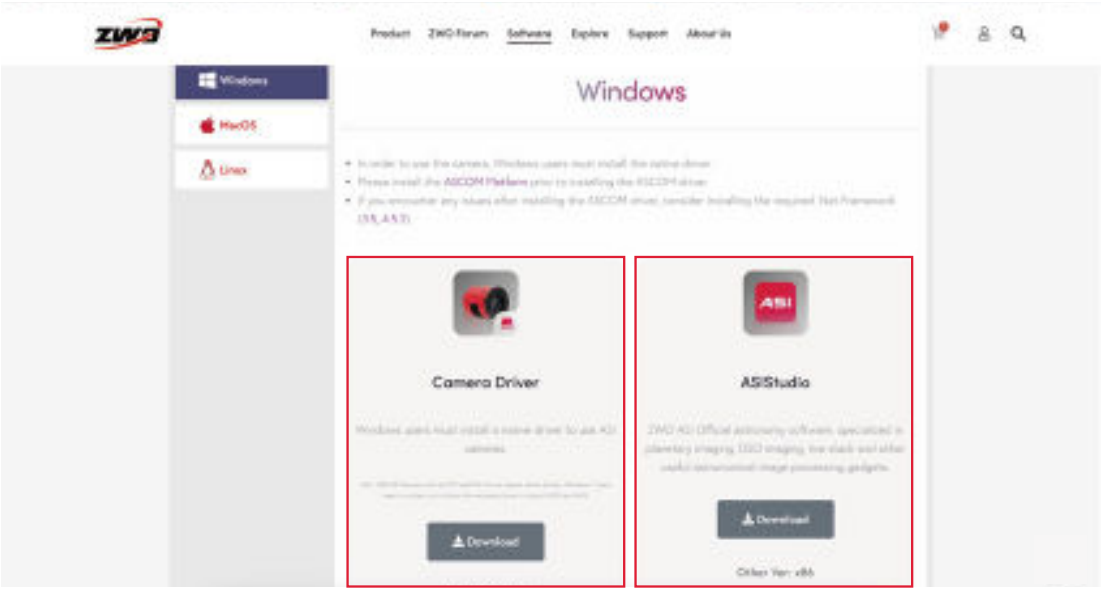


How to connect to the computer？(For Windows users)

1. Move towards the ZWO official website
https://www.zwoastro.com/ , go [Software].



2. Download [ASIStudio] and [Camera Driver].



ZWO ASI Cooled Cameras Quick Guide

V2.0



Thank you very much for purchasing the ZWO ASI camera. This instruction is a brief summary of the installation procedure to get you up and running with your new camera. Please be sure to read it before use.

Please head over to the ZWO website if you want more detailed information on the camera.